REMARKS

Claims 20-39 are pending in this application. Claims 20-38 stand rejected under 35 USC 102 as being anticipated by Becker (6152724). Claim 39 stands rejected under 35 USC 103 as being unpatentable over Becker (6152724) in view of Althaus (5647200). Claims 20, 33, and 38 have been amended. Support for this can be found at least in paragraphs 28 and 38 of the specification. No new matter has been added.

Applicant's Response to 35 USC 102 Rejections

Regarding independent claim 20, Becker teaches a choke ring that includes individual bars 13, which slow the flow in the region of the bars 13. (Col. 5, ll. 48-49). Becker specifically teaches "that the mixer for intermixing the fuel with the flow must be configured for the *requisite homogeneity* of the mixture produced." (Col. 2, ll.60-62). Further, Becker teaches selecting the size of the nozzle holes "in such a way that a *largely homogenous distribution of the fuel in the flow* is achieved." (Col. 5, ll. 62-64). Becker also teaches that if the bars 13 are not present in the structure, "nozzles of different size are also *not required* for feeding the fuel." (Col. 6, ll. 4-6). The bars 13 significantly change the characteristics of the flow, and cannot be ignored. If bars 13 were removed and nozzles 11 were left to very in size, resulting in Applicant's configuration, the resulting flow in Becker would not be homogenous, which is the exact opposite of what Becker seeks. In contrast, in independent claim 20, Applicant claims "a means for creating a mixture comprising a concentration distribution of fuel in the compressed air and/or oxygen in an axis perpendicular to the flow direction, *wherein the concentration distribution is **not** constant* across the axis" Hence, the structure in Becker does not anticipate Applicant's independent claim 20.

Applicant has further amended independent claim 20 to include a limitation regarding the outflow angle. As defined in paragraph [0026] of the specification, the outflow angle is "the angle between resulting velocity and circumferential velocity." Thus, as circumferential velocity increases, the outflow angle decreases. Applicant claims:

> a means for imparting a swirl of the mixture about the flow direction, wherein an outflow angle of the swirled mixture varies in magnitude in a single direction across the axis perpendicular to the flow direction.

If the outflow angle is different at different ends of the plane, the outflow has a different circumferential component to its flow at different ends of the radial axis. In other words, points in the flow at different radial distances from the common axis rotate about the common axis in the same direction, but at different angular rates. In one embodiment, the angular flow rate within the flow at a point closer to the common axis is slower than the angular flow rate at a point further from the common axis, but the angular flow is in the same direction. In contrast, Becker teaches swirl blades imparting an axial, radial, or diagonal swirl. However, none of those configurations result in the type of swirl Applicant claims. Therefore, Becker does not teach this limitation of Applicant's amended claim 20, so Becker cannot teach varying nozzle sizes together with such a flow configuration. Applicant requests Examiner withdraw the 35 USC 102 rejection of claim 20, and claims 21-32, which depend from and include all the limitations of independent claim 20, based on Becker, be withdrawn.

Regarding independent claim 33, Applicant has amended the claim to include the limitations added to claim 20. Applicant has similarly amended claim 38 to include similar language to clarify the outflow angles and rotation of the swirl. As argued for claim 20, Becker does not teach the type of flow Applicant claims. Applicant requests Examiner withdraw the 35 USC 102 rejection of amended independent claim 33, and claims 34-38, which depend from and include all the limitations of claim 33, based on Becker, be withdrawn.

Applicant's Response to 35 USC 103 Rejections

Regarding claim 39, as argued above, independent claim 33 and dependent claim 38 survive a 35 USC 102 rejection based on Becker. Claim 39 depends from claims 38 and 33. Thus, in order for the combination of Becker and Althaus to teach Applicant's claim 39, the combination of Becker and Althaus must supply the limitations of claims 33, 38, and 39.

Althaus teaches swirl blades imparting a direction change in the flow, but that direction change is different from what Applicant claims. In Althaus, the trailing edge of the support 6 is perpendicular to the flow. The inner half of that trailing edge imparts a change in flow in one direction, and the outer half imparts a change in flow in the other direction. The transition between the two halves of the trailing edge is *abrupt*. Thus, the edge imparts two different outflow angles with an abrupt transition between the two. To use this concept in Becker by replacing the guide blades 9 with the support 6, and then going one step further by modifying

Becker by removing bars 13, would result in two different outflow angles, but the change between the outflow angles would be abrupt, and the outflow angles would not vary in magnitude in a single direction across an axis perpendicular to the flow direction.

In contrast, Applicant claims "a means for imparting a swirl of the flow about a flow direction, wherein an outflow angle of the swirled flow varies in magnitude *in a single direction* across an axis perpendicular to the flow direction." The combination of a modified Becker and Althaus does not teach outflow angles varying in a single direction. Applicant respectfully requests the 35 USC 103 rejection of claim 39, based on the combination of Becker and Althaus, be withdrawn.

Conclusion

Applicants respectfully request reconsideration and allowance of the present application in view of the foregoing arguments. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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